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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,905	11/19/2001	Laurent A. Regimbal	10012143-1	9216

7590 08/24/2005

HEWLETT-PACKARD COMPANY  
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EXAMINER

MURPHY, DILLON J

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/988,905	REGIMBAL, LAURENT A.	
	Examiner	Art Unit	
	Dillon J. Murphy	2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/19/2001</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 7, 9, 11, 12, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Stephenson (US 5,140,340).

Regarding claim 1, Stephenson teaches a method comprising:

Measuring a print media skew of print media (Stephenson, col 2, ln 18-20, media skew is measured);

Mapping unskewed print information to compensate for the print media skew, thereby creating skew-corrected print information, and using the skew-corrected print information to apply a print image to the print media (Stephenson, col 2, ln 20-26, correction signals are combined with image data such that a printed image is aligned properly with the skewed print media).

Regarding claim 4, which depends from claim 1, Stephenson further teaches a method wherein mapping comprises mapping location information associated with each pixel contained within the unskewed print information by an amount required to compensate for the skew of the print media (Stephenson, col 8, ln 12-17, mapping measures column and line shift for each pixel of image data. See also col 7, ln 37-40).

Regarding claim 7, Stephenson teaches a method comprising:

Taking a measurement of print media skew (Stephenson, col 2, ln 18-20, media skew is measured);

Creating skew-corrected print information using the measurement of print media skew, and applying a print image to print media using the skew-corrected print information (Stephenson, col 2, ln 20-26, correction signals are combined with image data such that a printed image is aligned properly with the skewed print media).

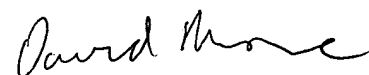
Regarding claim 9, which depends from claim 7, Stephenson further teaches a method wherein creating skew-corrected print information comprises mapping a location of a pixel of unskewed print data according to the print media skew (Stephenson, col 8, ln 12-17, mapping measures column and line shift for each pixel of image data. See also col 7, ln 37-40).

Regarding claim 11, Stephenson teaches a system comprising:

A sensor to sense skew of print media within a printer (Stephenson, figure 1, position sensor #16 measure skew of print media); and

A print output alignment module to align print output according to the skew of the print media (Stephenson, figure 1, data conditioner #18 calculates image alignment according to skew of print media, col 8, ln 12-17).

Regarding claim 12, which depends from claim 11, Stephenson further teaches a system wherein the print output alignment module comprises:



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A skew evaluation module to interpret measurements made by the sensor (Stephenson, col 4, ln 25-27, data conditioner receives data from sensor and accordingly interprets measurements); and

A print data mapping module to map unskewed print data to skew-corrected print data (Stephenson, col 6, ln 5-15, data conditioner receives measurements from sensor, generates correction signals, i.e. data mapping signals, to map unskewed print data to skew-corrected print data).

Regarding claim 17, Stephenson teaches a computer-readable medium having processor-executable instructions thereon (Stephenson, col 4, ln 28-38, operation of printer is controlled by software on a microprocessor) which, when executed by a processor, cause the processor to:

Measure skew of print media (Stephenson, col 2, ln 18-20, media skew is measured);

Create skew-corrected print information according to the skew, and apply a print image to the print media according to the skew-corrected print information (Stephenson, col 2, ln 20-26, correction signals are combined with image data such that a printed image is aligned properly with the skewed print media).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 6, 8, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson (US 5,140,340) and Ui et al. (US 6,340,984), hereafter referred to as Stephenson and Ui.

Regarding claim 2, which depends from claim 1, Stephenson teaches a method of measuring skew of print media, mapping unskewed print information to compensate for the media skew, and using the skew-corrected print information to apply a print image to the print media, as explained above in the rejection of claim 1. Stephenson does not disclose expressly the method of measuring a left and right translation and measuring an angular rotation of the print media. Ui, however, discloses a method for measuring the horizontal translation and angular rotation of print media skew (Ui, col 5, ln 40-50, sensor detects horizontal shift and skew angle).

Stephenson and Ui are combinable because they are from a similar field of endeavor of printing on skewed print media with skew-corrected print information. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the explicit method of measuring the horizontal translation and angle of print media skew of Ui with the method of measuring print media skew, mapping unskewed print information to skewed print information, and printing an image on print media as taught by Stephenson. The motivation for doing so would have been to form on a recording sheet an image which is free from inclination, and there is lightened a load for maintaining the accuracy and strength imposed on design and manufacture of an inclination prevention mechanism, thereby increasing the degree of freedom for

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design of an image forming apparatus, reducing cost and increasing speed of image forming (Ui, col 8, ln 16-25), as well as to provide a relatively simple printing system which provides accurate alignment of colors on a receiver at low cost and high speed (Stephenson, col 2, ln 8-11). Therefore, it would have been obvious to combine Ui with Stephenson to obtain the invention as specified in claim 2.

Regarding claim 3, which depends from claim 1, the combination of Stephenson and Ui further teaches a method wherein mapping comprises mapping location information associated with each pixel contained within the unskewed print information by an amount required to compensate for the left-right translation and the angular rotation of the print media (Ui, col 4, ln 50-56, each pixel is shifted according to a trigonometric function, and col 5, ln 40-50, wherein shifting is based upon the amount of horizontal and angular skew in print media).

Regarding claim 6, which depends from claim 1, the combination of Stephenson and Ui further teaches a method additionally comprising buffering unskewed print information to provide sufficient input for the mapping (Ui, col 4, ln 58-62, wherein the unskewed image data is read from an image memory to be processed).

Regarding claim 8, which depends from claim 7, the combination of Stephenson and Ui further teaches a method wherein taking a measurement comprises determining a left-right translation of the print media from a desired location, and determining an angle of rotation of the print media from a desired orientation (Ui, col 5, ln 40-50, sensor detects horizontal shift and skew angle).

Regarding claim 13, which depends from claim 11, the combination of Stephenson and Ui further teaches a system additionally comprising a first print data buffer to store unskewed print data (Ui, col 4, ln 58-62, wherein the unskewed image data is read from an image memory to be processed).

Regarding claim 14, which depends from claim 11, the combination of Stephenson and Ui further teaches a system additionally comprising a second buffer to store skew-corrected print data (Ui, col 4, ln 58-62, wherein the system comprises a second buffer to store skew-corrected print data, from which the output of images is controlled based on that data).

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson (US 5,140,340) and Burger et al. (US 5,856,877), hereafter referred to as Stephenson and Burger.

Regarding claim 5, which depends from claim 1, Stephenson teaches a method of measuring skew of print media, mapping unskewed print information to compensate for the media skew, and using the skew-corrected print information to apply a print image to the print media, as explained above in the rejection of claim 1. Stephenson does not disclose expressly a method additionally comprising turning off half-toning to simplify the mapping. Burger, however, teaches a method of turning off half-toning to simplify the mapping (Burger, col 4, ln 45-51, image information is subjected to half-toning to be put in the form of a raster pattern of image dots. First see col 5, ln 30-32, wherein the image information is converted to binary form as stored as a bit map in step 8 of figure 3, and then col 7, ln 1-24, steps 20 and 22 of figure 3, wherein skew



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correction is applied to image data and is separate from the steps of half-toning. Thus, the half-toning function is disabled while the skew processing is undergone).

Stephenson and Burger are combinable because they are from a similar problem solving area of applying skew correction to image data in printing devices. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to add the method of Burger comprising turning off the half-toning feature to simplify mapping to the method of Stephenson comprising measuring print media skew, mapping unskewed print information to skewed print information, and printing an image on print media. The motivation for doing so would have been to provide a printing apparatus suitable for simple and rapid processing of a document image, the result being a print with an appropriately adapted appearance (Burger, col 1, ln 44-47). Therefore, it would have been obvious to combine Burger with Stephenson to obtain the invention as specified in claim 5.

Regarding claim 10, which depends from claim 7, the combination of Stephenson and Burger teaches a method additionally comprising turning off half-toning to simplify creating skew-corrected print information (Burger, col 4, ln 45-51, image information is subjected to half-toning to be put in the form of a raster pattern of image dots. First see col 5, ln 30-32, wherein the image information is converted to binary form as stored as a bit map in step 8 of figure 3, and then col 7, ln 1-24, steps 20 and 22 of figure 3, wherein skew correction is applied to image data and is separate from the steps of half-toning. Thus, the half-toning function is disabled while the skew processing is undergone).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson (US 5,140,340) and Ishihara et al. (US 4,941,377), hereafter referred to as Stephenson and Ishihara.

Regarding claim 15, Stephenson teaches a system comprising a sensor to sense skew of print media in a printer, and a print output alignment module to align print output according to the skew of the print media, as explained above in the rejection of claim 15. Stephenson does not disclose expressly a system additionally comprising a media rejection module to reject the print media if the skew exceeds a threshold value. Ishihara, however, discloses a system comprising a media rejection module to reject the print media if the skew exceeds a threshold value (Ishihara, col 4, ln 14-27, printing system comprises skew sensor which senses the skew of the print media and halts the printer if the skew is too large to allow for servicing, thereby rejecting the print media).

Stephenson and Ishihara are combinable because they are from a similar field of endeavor of printing systems with skew detection and control. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the media rejection module as taught by Ishihara with the skew sensor and print output alignment module as taught by Stephenson. The motivation for doing so would have been to provide a printer that makes maintenance and replacement easier, and also safer and easier to recover from paper jamming (Ishihara, col 7, ln 53-56). Therefore, it would have been obvious to combine Ishihara with Stephenson to obtain the invention as specified in claim 15.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ui et al. (US 6,340,984) and Ishihara et al. (US 4,941,377), hereafter referred to as Ui and Ishihara.

Regarding claim 16, Ui teaches a system to detect and compensate for print media skew within a printer (Ui, col 1, ln 47-54, imaging forming apparatus detects media skew and maps image data to form an unskewed image relative to a skewed print media), comprising:

A skew evaluation module to interpret measurements made by a sensor and determine print media skew (Ui, figure 2, Line Sensor LS transmits horizontal and angular skew measurements of print media to Inclination/Shift Calculation Section SO, where SO interprets measurements and determines print media skew, col 4, ln 28-35);

A first print data buffer to store unskewed print data (Ui, col 4, ln 58-62, wherein the unskewed image data is read from an image memory to be processed);

A print data mapping module to map the unskewed print data to skew-corrected print data (Ui, figure 2, Control Section CR (not shown) controls Reading Section RD, and the CR and the RD constitute the image angle correction means. See col 4, ln 37-41); and

A second buffer to store the skew-corrected print data (Ui, col 4, ln 58-62, wherein the system comprises a second buffer to store skew-corrected print data, from which the output of images is controlled based on that data).

Ui does not teach a media rejection module to reject print media if the print media skew exceeds a threshold value. Ishihara, however, teaches a system comprising a

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media rejection module to reject print media if the print media skew exceeds a threshold value (Ishihara, col 4, ln 14-27, printing system comprises skew sensor which senses the skew of the print media and halts the printer if the skew is too large to allow for servicing, thereby rejecting the print media).

Ui and Ishihara are combinable because they are from a similar field of endeavor of printing systems dealing with skew correction and control. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the media rejection module as taught by Ishihara with the system as taught by Ui comprising a skew evaluation module, a print data mapping module, and a first and second data buffers to store unskewed and skewed data, respectively. The motivation for doing so would have been to provide a printer that makes maintenance and replacement easier, and also safer and easier to recover from paper jamming (Ishihara, col 7, ln 53-56), as well as to form on a recording sheet an image which is free from inclination, and there is lightened a load for maintaining the accuracy and strength imposed on design and manufacture of an inclination prevention mechanism, thereby increasing the degree of freedom for design of an image forming apparatus, reducing cost and increasing speed of image forming (Ui, col 8, ln 16-25). Therefore, it would have been obvious to combine Ishihara with Ui to obtain the invention as specified in claim 16.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon J. Murphy whose telephone number is (571) 272-5945. The examiner can normally be reached on M-F, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).